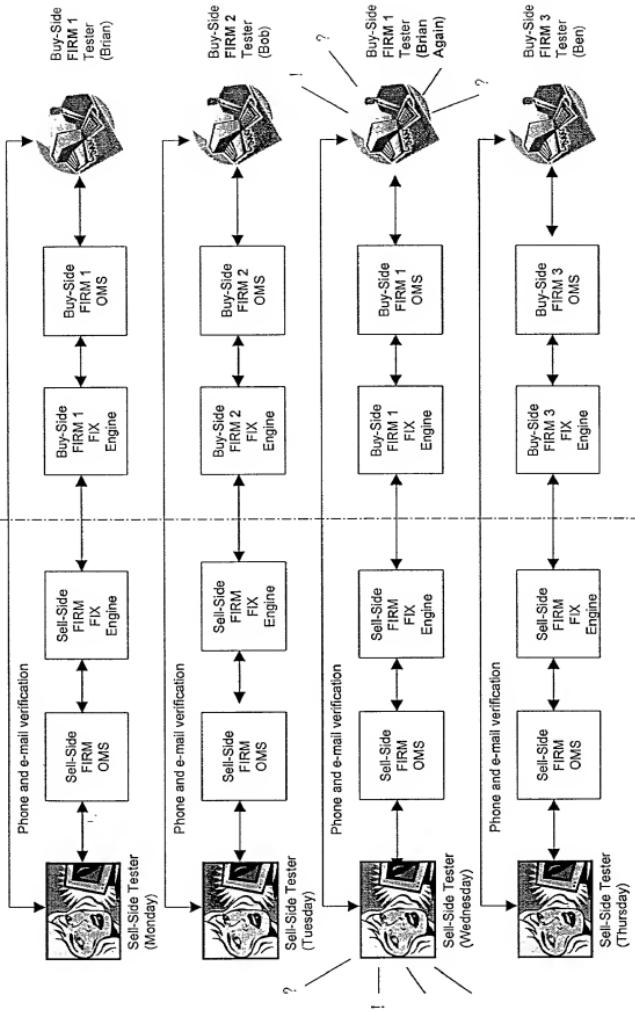


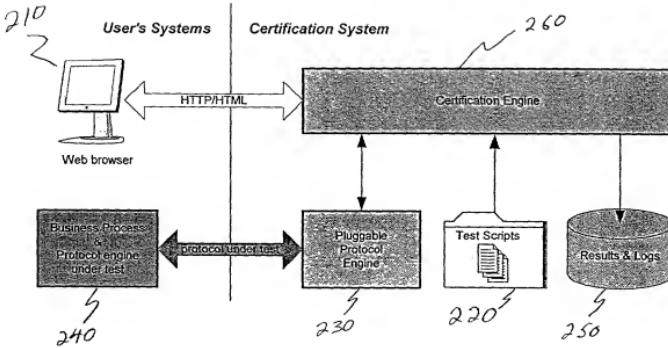
Manual Certification (*Prior Art*)



Sell-Side FIRMS

Buy-Side FIRMS 1 → X

F 16, /



F16.2

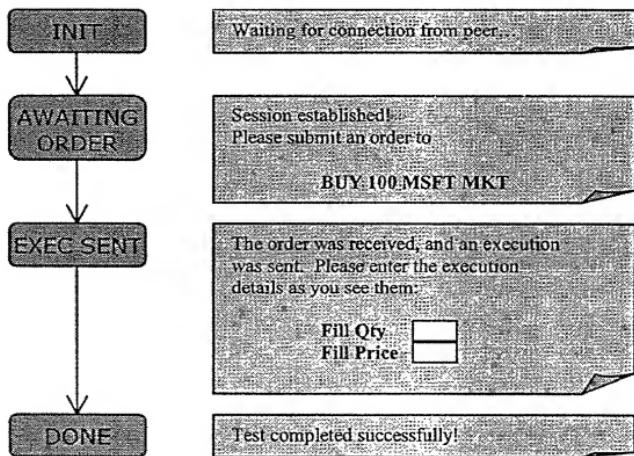
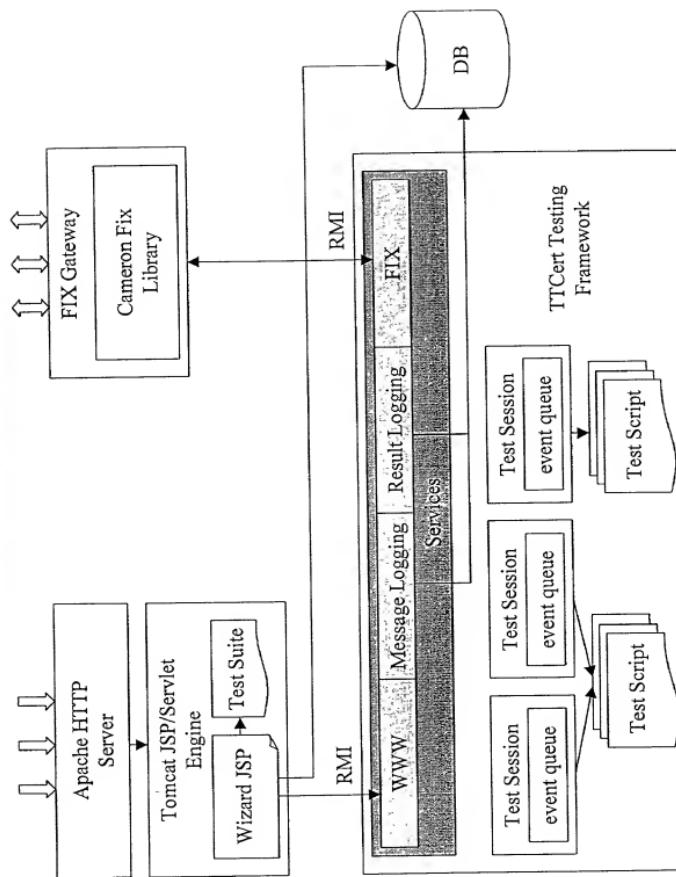
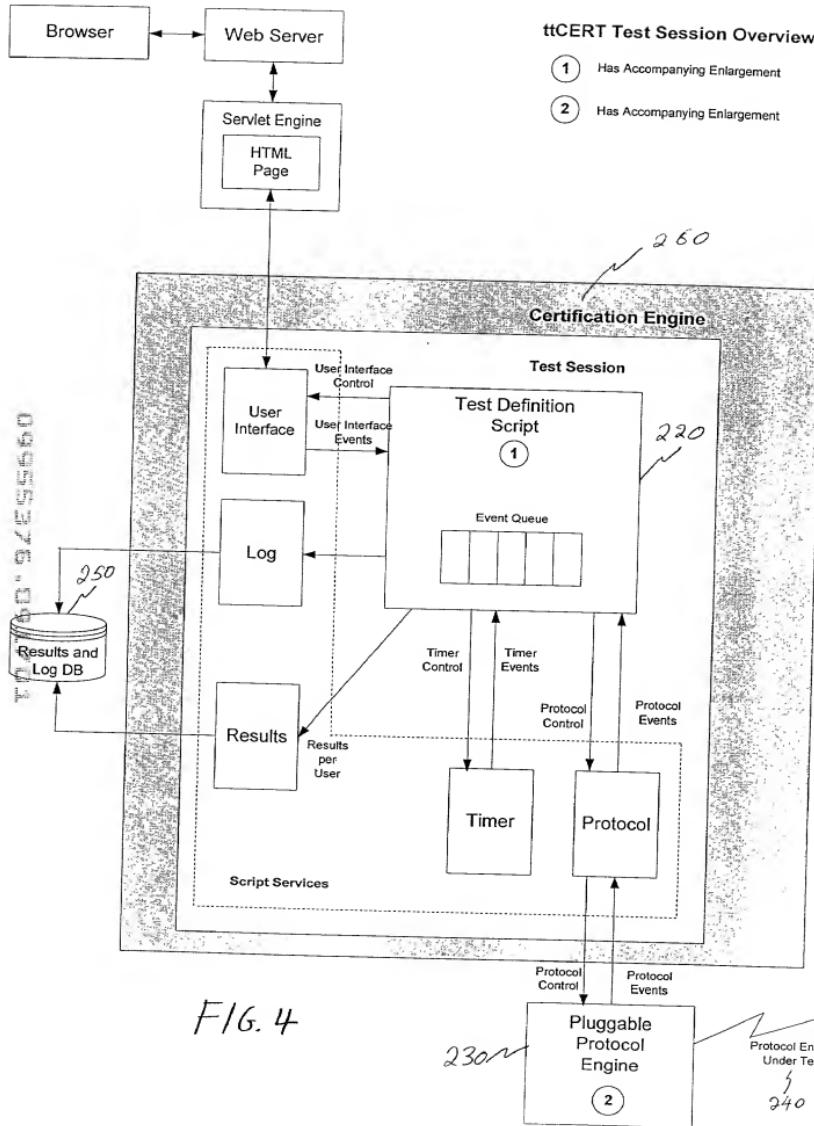
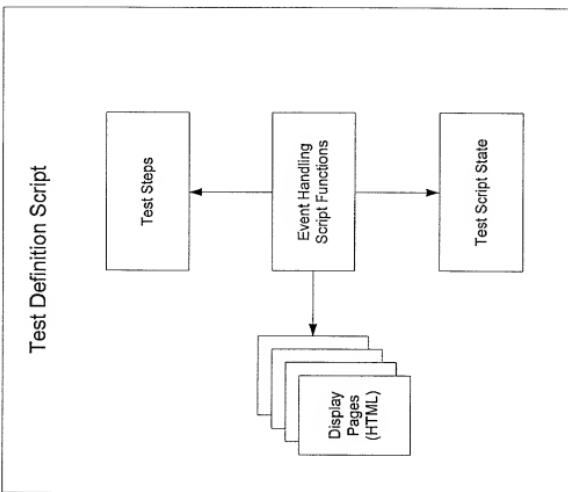


FIG. 2A

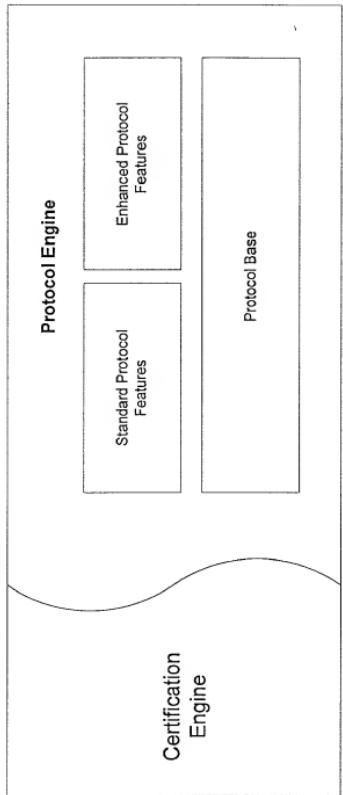






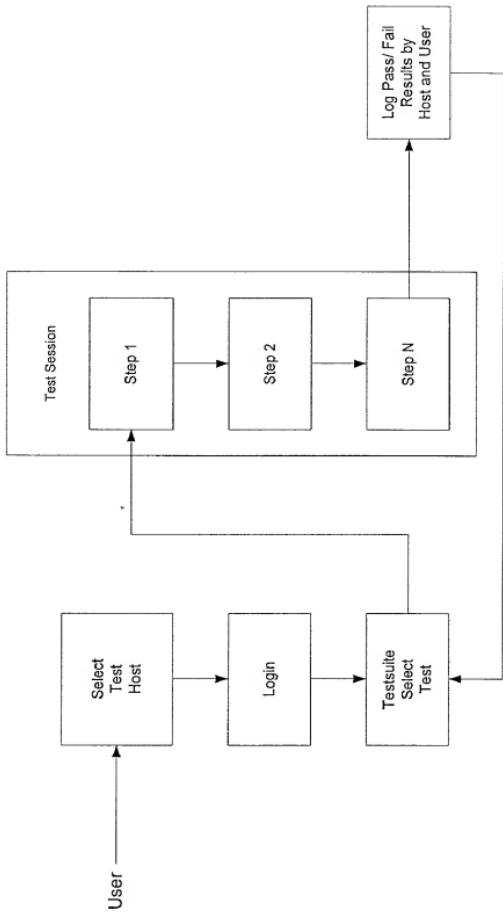
F16. 5

Protocol Glaciers



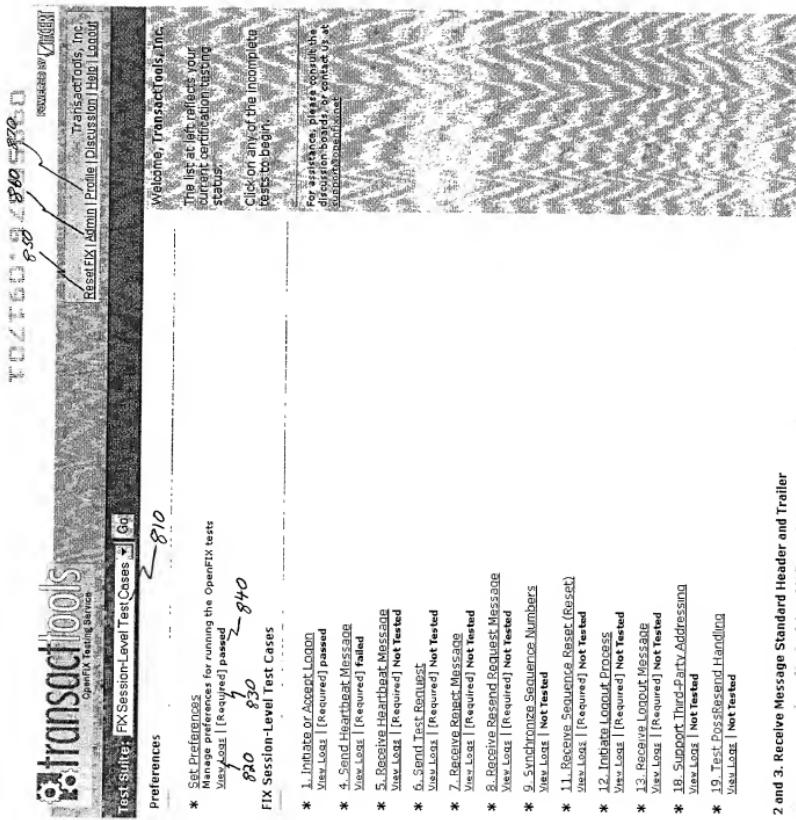
F16, 6

Testing Workflow

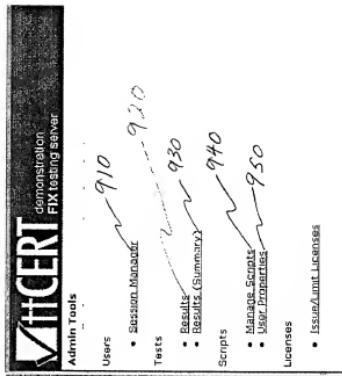


F16.7

F/16.8



TO/TODAY'S SESSIONS



F/6. 9

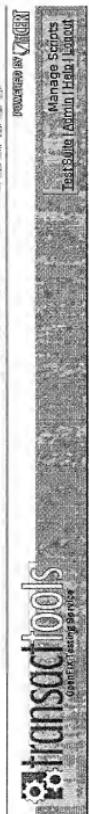
TRANSACTION TOOLS INC. CERTIFICATION

Active Certification Sessions (as of 14:21:40) [Refresh]

demo

TransactTools, Inc. () [Logout]
Web Session		
Status:	Logged In	
Login Time:	Thu May 17 14:20:35 EDT 2001	
Last Activity Time:	Thu May 17 14:21:40 EDT 2001	
Time Inactive:	0:0:0	
Last Request:	/cert/demo/cert/admin/session.jsp	
FIX Certification Test Session	[Shutdown] [Reset FIX] [View Log]	
Status:	In Progress	
Script:	D1 - (Connect to server)	
	urn:D1:1	
Start Time:	[Thu May 17 14:21:35 EDT 2001]	
FIX Connection Status:	Not Connected	
IP Address:	N/A	
Last Sent:	N/A	
Last Received:	N/A	

F/6.10



Current directory: /

Directory Name	File Name	Last Modified
110	1.401.xml	07/24/2001 11:09
110	1.402.xml	07/24/2001 11:09
110	1.403.xml	07/24/2001 11:09
110	1.404.xml	07/24/2001 11:09
110	1.405.xml	07/24/2001 11:09
110	1.406.xml	07/24/2001 11:09
110	1.407.xml	07/24/2001 11:09
110	1.408.xml	07/24/2001 11:09
110	1.409.xml	07/24/2001 11:09
110	1.4010.xml	07/24/2001 11:09
120	1.410.xml	07/24/2001 11:09
120	1.411.xml	07/24/2001 11:09
120	1.412.xml	07/24/2001 11:09
120	1.413.xml	07/24/2001 11:09
120	1.414.xml	07/24/2001 11:09
120	1.415.xml	07/24/2001 11:09
120	1.416.xml	07/24/2001 11:09
120	1.417.xml	07/24/2001 11:09
120	1.418.xml	07/24/2001 11:09
120	1.419.xml	07/24/2001 11:09
140	1.420.xml	07/24/2001 11:09
140	1.421.xml	07/24/2001 11:09
140	1.422.xml	07/24/2001 11:09
140	1.423.xml	07/24/2001 11:09
140	1.424.xml	07/24/2001 11:09
140	1.425.xml	07/24/2001 11:09
140	1.426.xml	07/24/2001 11:09
140	1.427.xml	07/24/2001 11:09
140	1.428.xml	07/24/2001 11:09
140	1.429.xml	07/24/2001 11:09

Files

File Name	Last Modified
1.401.xml	07/24/2001 11:09
1.402.xml	07/24/2001 11:09
1.403.xml	07/24/2001 11:09
1.404.xml	07/24/2001 11:09
1.405.xml	07/24/2001 11:09
1.406.xml	07/24/2001 11:09
1.407.xml	07/24/2001 11:09
1.408.xml	07/24/2001 11:09
1.409.xml	07/24/2001 11:09
1.4010.xml	07/24/2001 11:09
1.410.xml	07/24/2001 11:09
1.411.xml	07/24/2001 11:09
1.412.xml	07/24/2001 11:09
1.413.xml	07/24/2001 11:09
1.414.xml	07/24/2001 11:09
1.415.xml	07/24/2001 11:09
1.416.xml	07/24/2001 11:09
1.417.xml	07/24/2001 11:09
1.418.xml	07/24/2001 11:09
1.419.xml	07/24/2001 11:09
1.420.xml	07/24/2001 11:09
1.421.xml	07/24/2001 11:09
1.422.xml	07/24/2001 11:09
1.423.xml	07/24/2001 11:09
1.424.xml	07/24/2001 11:09
1.425.xml	07/24/2001 11:09
1.426.xml	07/24/2001 11:09
1.427.xml	07/24/2001 11:09
1.428.xml	07/24/2001 11:09
1.429.xml	07/24/2001 11:09

F16. //

TO/T60-375560



Upload: 12/0

Upload:

Upload:

Upload:

Upload:

Upload:

Upload:

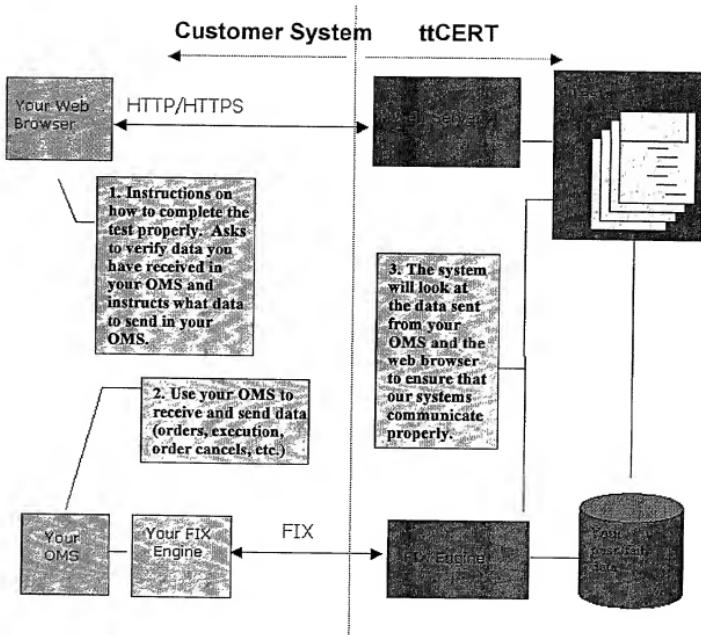
Upload:

Upload:

Upload:

12/0

F16. 12



F/6. 13

TO/TED • 9/25/2010

F16. 14

The screenshot shows the transact tools software interface. At the top, there's a menu bar with 'File', 'Edit', 'View', 'Log', 'Help', and 'About'. Below the menu is a toolbar with icons for 'New Order', 'Open Orders', 'Trade History', 'Trade Log', 'Trade Alerts', and 'Help'. The main window has a title bar 'Order Fill' and a status bar at the bottom right with 'refresh ▲ ■'.

The central area displays an order fill message:

Sell 1500 AOL at a limit price of 40

Waiting for order... ↘ 1410

Below this, there's a 'Send an Order' section with a note: 'Please enter and send the following order from your trading application:' followed by the same order details.

To the left, a sidebar titled 'Order Fill' lists steps: 'Connect to Server', 'Submit Order', 'Verify Order/Ack', 'Wait Till Complete', and 'Trade Complete'.

At the bottom left, there's a 'Help' section with links to 'Help', 'Zach Zimmerman Transactions Inc.', 'View Log', 'About', 'Discussion', and 'Help/Logout'.

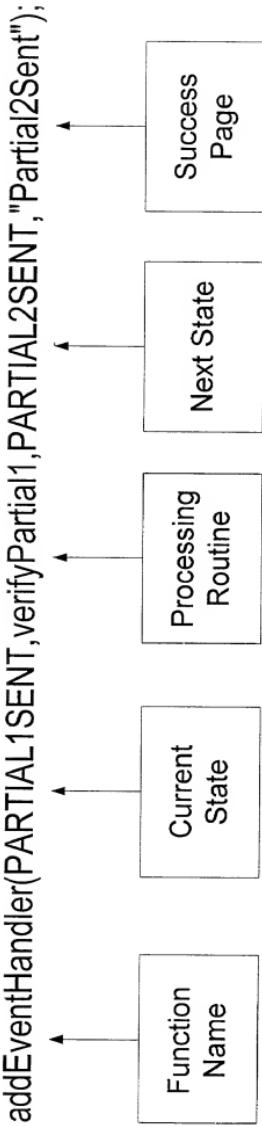


FIG. 15

702760 9/25/2001



Customer Support

Order Fill

Steps

Help

Connect to Server
Submit Order
Verify Order Ack
Cancel Order
Test Commission

The test server has sent you an acknowledgement for your order.
You should see that your order has been accepted by the test server and
is now in a "working" or "live" state.

Do you see that the order has been accepted?

YES NO

Warnings: (see Help at right for more details)

Field S2(SendingTime): Your time (Thu Aug 02 13:42:31 EDT 2001) is more
than 1 minute away from the host time (Thu Aug 02 13:41:16 GMT-0400 (EDT)
2001)

The order you sent was
received and validated by the
test server and a confirmation
was sent by the test server
back to your trading application.

Your trading application should
indicate to your broker an
("Ocean") -- as opposed to
reject was received for the
order you sent, and that the
order is now "live".

NOTE: Some trading
applications simply move the
order into a working
status without acknowledging
the order. If you do not see
the order in a "live" state, it is
important that the broker is
represented, only that you
know the order is actively being
traded at the broker.

F16. 16

Warnings:

- The sending time on this message is more than 1 minute off. We accept deviations of up to 1 minute to account for clock differences, but we encourage you to sync your servers' atomic time to minimize this difference.

1630

1620

1610

refresh ▲ ▼

TO TEST "SELL SIDE"

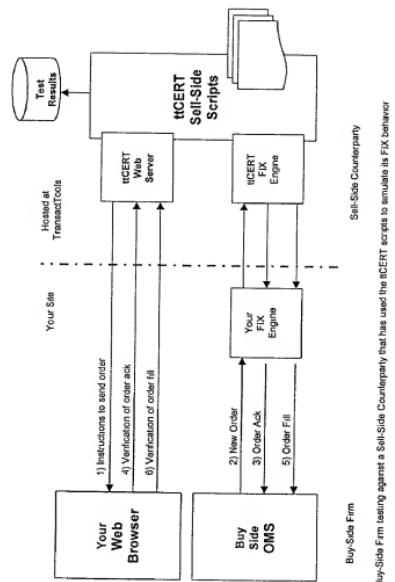
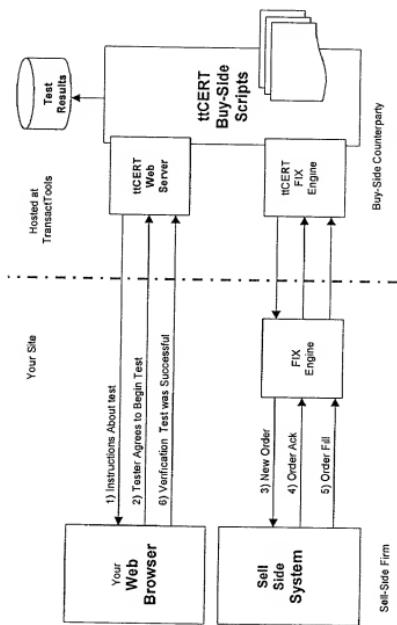


FIG. 17

Test Site Generation



Sell-Side Firm testing against a Buy-Side Counterparty that has used the ttCERT scripts to simulate its FIX behavior

FIG. 18

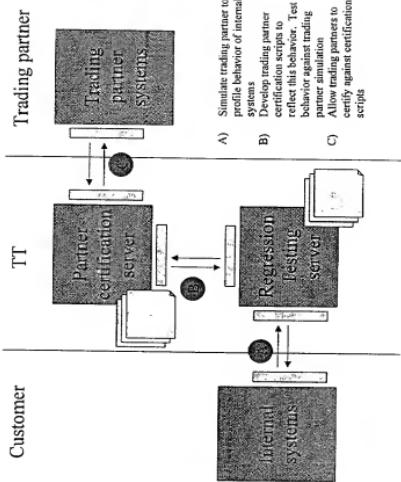


FIG. 19

TO CERT™ Solutions

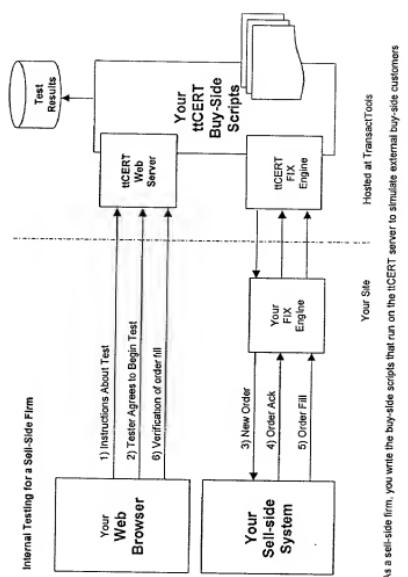
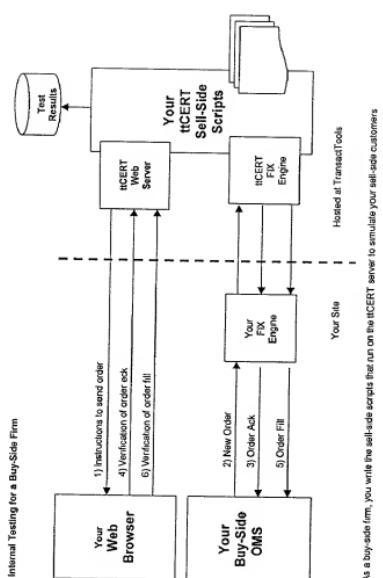


FIG. 20

Internal Testing for a Buy-Side Firm



As a buy-side firm, you write the self-side scripts that run on the tcCERT server to simulate your self-side customers.

FIG. 21

Internal Testing of Automated Scripts • Running Buy-Side Scripts Against Self-Side Scripts

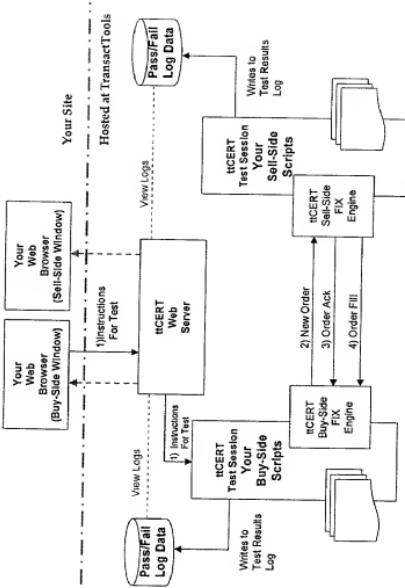
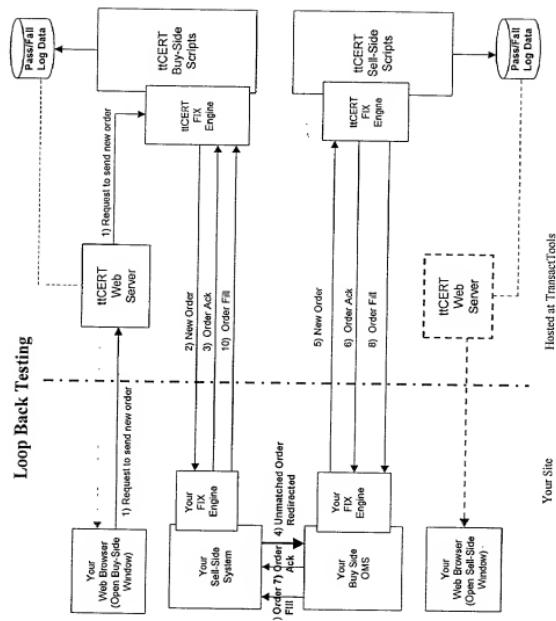


FIG. 22

**FIG. 23**